

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Beat Studer

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Title: METHOD AND DEVICE FOR THE GATHERING OF FLAT
ARTICLES

Examiner: N/A

Docket No.: FRR-12814

PRELIMINARY AMENDMENT "A"

Assistant Commissioner for Patents
Washington, D.C. 20231

Sir:

Please amend the above-identified application, prior to examination thereof, in the
following manner.

IN THE CLAIMS:

Please amend the claims as follows:

1. (Amended) A method for gathering flat articles (5) in stacks (9) of one or more articles (5) each, the method comprising the steps of:

conveying the stacks (9) being produced one after the other along a gathering route (1) in a stack conveyance direction and past at least one feed station, each stack lying against a supporting surface (7) of a stack support (2);

supplying articles (5) along a supply route (3) in a feed direction to the feed station;

inserting one of the flat articles (5) between each two successive stacks (9) or stack supports (2) respectively; and,

positioning the inserted article on one of the two successive stacks (9) or supporting surfaces (7) of stack supports respectively, wherein the supply direction comprises a component parallel to the stack conveyance direction, and wherein the articles (5) are inserted between two successive stacks (9) or stack supports (2) while being gripped on their leading edges (5.1).

2. (Amended) The method in accordance with claim 1, wherein the stack supports are aligned not parallel to the stack conveyance direction.

3. (Amended) The method according to claim 1, wherein each of the stack supports (2) comprises a stop ledge (8) at a bottom edge of the supporting surfaces (7), the articles (5) are inserted between the stacks (9) or the stack supports (2) from above, the gripped edges (5.1) are directed downwards and the articles (5) are released from being held when the gripped edge (5.1) is positioned immediately above the stop ledge (8).

4. (Amended) The method in accordance with claim 3, wherein the articles (5) are conveyed towards the feed station with their gripped edges (5.1) directed forwards and are positioned on the upstream stack (9) or on the upstream supporting surface (7), respectively.

5. (Amended) The method according to claim 3, wherein the articles (5) are

conveyed towards the feed station with their gripped edges (5.1) directed backwards and are positioned on the downstream stack (9) or on the downstream supporting surface (7), respectively.

6. (Amended) The method in accordance with claim 1, wherein, during insertion of the articles between the stacks (9) or stack supports (2), respectively, the gripped edges (5.1) are conveyed more rapidly or more slowly in the stack conveyance direction than the stack supports (2).

7. (Amended) The method according to claim 6, wherein the supporting surfaces (7) are positioned inclined or slanting relative to the gathering route (1) and wherein, during insertion of the articles between the stacks (9) or stack supports (2), respectively, the gripped edges (5.1) are conveyed in parallel to the supporting surface inclination.

8. (Amended) The method in accordance with claim 1, wherein the articles (5) are conveyed towards the feed station in a suspended manner and are inserted between the stacks (9) or stack supports (2), respectively, from below, the gripped edges (5.1) being directed upwards.

9. (Amended) The method according to claim 1, wherein the articles (5) are conveyed towards the feed station with their gripped edge (5.1) oriented towards one side and wherein the articles are inserted sideways between the stacks (9) or stack supports (2), respectively.

10. (Amended) An arrangement for gathering flat articles (5), the arrangement comprising a plurality of stack supports (2) and a plurality of holding elements (4), each of the plurality of stack supports (2) comprising a supporting surface (7) and being conveyed one behind the other in a stack conveyance direction along a gathering route (1) past at least one feed station, each of the plurality of holding elements (4) being equipped for held supply of one flat article (5) to the feed station and being conveyed one after the other in a supply direction along a supply route (3) towards the gathering route (1) and in the feed station being deactivated for releasing the article (5), wherein the supply direction comprises a component parallel to the stack conveyance direction, wherein the supply route (3) traverses the gathering route (1) at the feed station, wherein conveyance of the stack supports (2) and the holding elements (4) are matched to

one another such that, at the feed station, one holding element (4) is conveyed between every pair of successive stack supports (2), and wherein the device further comprises means for deactivating the holding elements (4) during their conveyance between the stack supports.

11. (Amended) The arrangement in accordance with claim 10, wherein the supporting surfaces (7) are aligned not in parallel with the gathering route (1).

12. (Amended) The arrangement according to claim 10, wherein the stack supports (2) are arranged on at least one first conveying organ (30) and the holding elements (4) are arranged on at least one second conveying organ (31), wherein the conveying organs (30, 31) are arranged in planes parallel to one another at least in the area of the feed station.

13. (Amended) The arrangement in accordance with claim 10, wherein the supporting surfaces (7) comprise lower and upper edges aligned transverse to the gathering route (1) and lateral edges aligned inclined relative to the gathering route (1), as well as stop ledges (8) located on the lower edge.

14. (Amended) The arrangement according to claim 13, wherein the supply route (3) traverses the gathering route (1) from above to below and the means for deactivating the holding elements (4) is arranged such that the holding elements (4) are deactivated when positioned in a lower zone of the stack supports (2).

15. (Amended) The arrangement in accordance with claim 13, wherein the supply route (3) traverses the gathering route (1) from below to above and the means for deactivating the holding elements (4) is arranged such that the holding elements (4) are deactivated when positioned in an upper zone of the stack supports (2).

16. (Amended) The arrangement according to claim 15, wherein a second stop ledge (8') is provided in the upper zone of each supporting surface.

17. (Amended) The arrangement in accordance with claim 13, wherein the supply route (3) traverses the gathering route (1) from a first side of the stack supports (2) to a second, opposite side and the means for deactivating the holding elements (4) is arranged such that the

holding elements (4) are deactivated when positioned in a zone of the second, opposite side of the stack supports (2).

18. (Amended) The arrangement according to claim 12, wherein the stack supports (2) are arranged laterally on a first conveying organ (30), the holding elements (4) are arranged laterally on a second conveying organ (31), and the first and second conveying organs (30 and 31) are arranged such that the holding elements (4) and the stack supports (2) pass in combing manner through one another in the traversing area.

19. (Amended) The arrangement in accordance with claim 18, wherein the stop ledges (8) of the stack supports (2) comprise passages (33) for the holding elements (4).

20. (Amended) The arrangement according to claim 12, wherein each of the stack supports (2) comprises two stack support parts (2.1, 2.2) arranged at a distanced from one another transverse to the gathering route (1), each of the two stack support parts being arranged on one of two first conveying organs (30.1 and 30.2), and the holding elements (4) and the second conveying organ (31) are arranged to pass in the traversing zone between the stack support parts (2.1, 2.2).

21. (Amended) The arrangement in accordance with claim 12, wherein each of the holding elements (4) comprises two holding element parts (4.1 and 4.2) distanced from each other transverse to the gathering route (1), each holding element part being arranged on one of two second conveying organs (31.1 and 31.2), and the stack supports (2) and the first conveying organ (30) are arranged between the holding element parts (4.1 and 4.2).

22. (Amended) The arrangement according to claim 10, wherein the stack supports (2) are V-shaped compartments (20) arranged transverse to the gathering route (1) and comprising side walls arranged one behind the other in the stack conveyance direction and a floor joining the side walls, wherein one of the side walls serves as supporting surface (7) and the floor as stop ledge (8), and wherein the other side wall (21) is capable of taking over the function of the next upstream or downstream stack support (2).

IN THE ABSTRACT:

Please replace the original abstract with the following:

ABSTRACT OF THE DISCLOSURE

Flat articles (5) are gathered into stacks (9) by conveying stacks in production successively along a gathering route (1) past feed stations and by adding one article to each stack in every feed station. The stacks (9) in production are conveyed on stack supports (2) with supporting surfaces (7). The supply direction of the articles has a component parallel to the stack conveyance direction and the supporting surfaces (7) are advantageously arranged not in parallel to the gathering route (1). The articles (5), each respectively gripped by a holding element (4) on one of their edges (5.1), are conveyed along a supply route (3) to the feed station. The supply route (3) traverses the gathering route (1) at the feed station. The articles (5) are inserted between successive stacks (9) or stack supports (2) and are held gripped from above with their leading edges (5.1). The gripped edge is released from being held by deactivation of the holding element (4), when it has reached the lower zone of the stack supports (2). The released article is then positioned on the upstream or downstream stack (9) or stack support (2) by the force of gravity and/or by its own inertia, and the holding element (4) is conveyed onwards in a downward direction.

REMARKS

Attached hereto is a marked-up version of the changes made to the application by the present Amendment. If clarification of the amendment or application is desired, or if issues are present which the Examiner believes may be quickly resolved, the Examiner is invited to initiate a telephone interview with the undersigned attorney to expedite prosecution of the present application.

If there are any additional fees resulting from this communication, please charge same to our Deposit Account No. 18-0160, our Order No. FRR-12814.

Respectfully submitted,

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Attachment: Marked-up version of Amendments

IN THE CLAIMS:

The claims have been amended as follows:

1. (Amended) ~~[Method]~~ A method for gathering flat articles (5) in stacks (9) of one or more articles (5) each, the method comprising the ~~[step]~~ steps of:

conveying the stacks (9) being produced one after the other along a gathering route (1) in a stack conveyance direction and past at least one feed station, each stack lying against a supporting surface (7) of a stack support (2), ~~the method further comprising the steps of:~~

supplying articles (5) along a supply route (3) in a feed direction to the feed station~~;~~;

inserting one of the flat articles (5) between each two successive stacks (9) or stack supports (2) respectively; and,

positioning the inserted article on one of the two successive stacks (9) or supporting surfaces (7) of stack supports respectively, wherein the supply direction comprises a component parallel to the stack conveyance direction, and wherein the articles (5) are inserted between two successive stacks (9) or stack supports (2) while being gripped on their leading edges (5.1).

2. (Amended) ~~[Method]~~ The method in accordance with claim 1, ~~[characterized in that]~~ wherein the stack supports are aligned not parallel to the stack conveyance direction.

3. (Amended) ~~[Method]~~ The method according to claim 1, ~~[characterized in that]~~ wherein each of the stack supports (2) ~~[each one]~~ comprises a stop ledge (8) at a bottom edge of the supporting surfaces (7), ~~[that]~~ the articles (5) are inserted between the stacks (9) or the stack supports ~~[(2)]~~(2) from above, the gripped edges (5.1) are directed downwards and ~~[that]~~ the articles (5) are released from being held~~[-]~~ when the gripped edge (5.1) is positioned immediately above the stop ledge (8).

4. (Amended) ~~[Method]~~ The method in accordance with claim 3, ~~[characterized in that]~~ wherein the articles (5) are conveyed towards the feed station with their gripped edges (5.1) directed forwards and are positioned on the upstream stack (9) or on the upstream supporting surface (7), respectively.

5. (Amended) ~~[Method]~~ The method according to claim 3, ~~[characterized in that]~~ wherein the articles (5) are conveyed towards the feed station with their gripped edges (5.1) directed backwards and are positioned on the downstream stack (9) or on the downstream supporting surface (7), respectively.

6. (Amended) ~~[Method]~~ The method in accordance with claim 1, ~~[characterized in that]~~ wherein, during insertion of the articles between the stacks (9) or stack supports (2), respectively, the gripped edges (5.1) are conveyed more rapidly or more slowly in the stack conveyance direction than the stack supports (2).

7. (Amended) ~~[Method]~~ The method according to claim 6, ~~[characterized in that]~~ wherein the supporting surfaces (7) are positioned inclined or slanting relative to the gathering route (1) and ~~[that]~~ wherein, during insertion of the articles between the stacks (9) or stack supports (2), respectively, the gripped edges (5.1) are conveyed in parallel to ~~[this]~~ the supporting surface inclination.

8. (Amended) ~~[Method]~~ The method in accordance with claim 1, ~~[characterized in that]~~ wherein the articles (5) are conveyed towards the feed station in a suspended manner and are inserted between the stacks (9) or stack supports (2), respectively, from below, ~~[their]~~ the gripped edges (5.1) being directed upwards.

9. (Amended) ~~[Method]~~ The method according to claim 1, ~~[characterized in that]~~ wherein the articles (5) are conveyed towards the feed station with their gripped edge (5.1) oriented towards one side and ~~[that]~~ wherein the articles are inserted sideways between the stacks (9) or stack supports (2), respectively.

10. (Amended) ~~[Arrangement]~~ An arrangement for gathering flat articles (5), the arrangement comprising a plurality of stack supports (2) and a plurality of holding elements (4), each of the plurality of stack supports (2) comprising a supporting surface (7) ~~[each]~~ and being conveyed one behind the other in a stack conveyance direction along a gathering route (1) past at least one feed station, each of the plurality of holding elements (4) being equipped for held

supply of one flat article (5) ~~to each~~ to the feed station and being conveyed one after the other in a supply direction along a supply route (3) towards the gathering route (1) and in the feed station being deactivated for releasing the article (5), wherein the supply direction comprises a component parallel to the stack conveyance direction, wherein the supply route (3) traverses the gathering route (1) at the feed station, wherein conveyance of the stack supports (2) and ~~of~~ the holding elements (4) are matched to one another ~~in~~ such ~~a manner,~~ that, at the feed station, one holding element (4) is conveyed between every pair of successive stack supports (2), and wherein the device further comprises means for deactivating the holding elements (4) during their conveyance between the stack supports.

11. (Amended) ~~Arrangement~~ The arrangement in accordance with claim 10, ~~characterized in that~~ wherein the supporting surfaces (7) are aligned not in parallel with the gathering route (1).

12. (Amended) ~~Arrangement~~ The arrangement according to claim 10, ~~characterized in that~~ wherein the stack supports (2) are arranged on at least one first conveying organ (30) and the holding elements (4) are arranged on at least one second conveying organ (31), wherein the conveying organs (30, 31) are arranged in planes parallel to one another at least in the area of the feed station.

13. (Amended) ~~Arrangement~~ The arrangement in accordance with claim 10, ~~characterized in that~~ wherein the supporting surfaces (7) comprise lower and upper edges aligned transverse to the gathering route (1) and lateral edges aligned inclined relative to the gathering route (1), as well as stop ledges (8) located on the lower edge.

14. (Amended) ~~Arrangement~~ The arrangement according to claim 13, ~~characterized in that~~ wherein the supply route (3) traverses the gathering route (1) from above to below and ~~that~~ the means for deactivating the holding elements (4) is arranged ~~in~~ such ~~a manner,~~ that the holding elements (4) are deactivated~~,~~ when positioned in a lower zone of the stack supports (2).

15. (Amended) ~~{Arrangement}~~ The arrangement in accordance with claim 13, ~~{characterized in that}~~ wherein the supply route (3) traverses the gathering route (1) from below to above and ~~{that}~~ the means for deactivating the holding elements (4) ~~{are}~~ is arranged ~~{in}~~ such ~~{a manner,}~~ that the holding elements (4) are deactivated~~{,}~~ when positioned in an upper zone of the stack supports (2).

16. (Amended) ~~{Arrangement}~~ The arrangement according to claim 15, ~~{characterized in that}~~ wherein a second stop ledge (8') is provided in the upper zone of each supporting surface.

17. (Amended) ~~{Arrangement}~~ The arrangement in accordance with claim 13, ~~{characterized in that}~~ wherein the supply route (3) traverses the gathering route (1) from a first side of the stack supports (2) to a second, opposite side and ~~{that}~~ the means for deactivating the holding elements (4) ~~{are}~~ is arranged ~~{in}~~ such ~~{a manner,}~~ that the holding elements (4) are deactivated~~{,}~~ when positioned in a zone of the second, opposite side of the stack supports (2).

18. (Amended) ~~{Arrangement}~~ The arrangement according to claim 12, ~~{characterized in that}~~ wherein the stack supports (2) are arranged laterally on a first conveying organ (30), ~~{that}~~ the holding elements (4) are arranged laterally on a second conveying organ (31), and ~~{that}~~ the first and ~~{the}~~ second conveying ~~{organ}~~ organs (30 and 31) are arranged ~~{in}~~ such ~~{a manner,}~~ that the holding elements (4) and the stack supports (2) pass in combing manner through one another in the traversing area.

19. (Amended) ~~{Arrangement}~~ The arrangement in accordance with claim 18, ~~{characterized in that}~~ wherein the stop ledges (8) of the stack supports (2) comprise passages (33) for the holding elements (4).

20. (Amended) ~~{Arrangement}~~ The arrangement according to claim 12, ~~{characterized in that}~~ wherein each ~~{one}~~ of the stack supports (2) comprises two stack support parts (2.1, 2.2) arranged at a distance from one another transverse to the gathering route (1), each ~~{one}~~ of the two stack support parts being arranged on one of two first conveying organs (30.1 and 30.2), and ~~{that}~~ the holding elements (4) and the second conveying organ (31) are arranged to pass in the traversing zone between the stack support parts (2.1, 2.2).

21. (Amended) ~~[Arrangement]~~ The arrangement in accordance with claim 12, ~~[characterized in that]~~ wherein each ~~[one]~~ of the holding elements (4) comprises two holding element parts (4.1 and 4.2) distanced from each other transverse to the gathering route (1), each holding element part being arranged on one of two second conveying organs (31.1 and 31.2), and ~~[that]~~ the stack supports (2) and the first conveying organ (30) are arranged between the holding element parts (4.1 and 4.2).

22. (Amended) ~~[Arrangement]~~ The arrangement according to claim 10, ~~[characterized in that]~~ wherein the stack supports (2) are V-shaped compartments (20) arranged transverse to the gathering route (1) and comprising side walls arranged one behind the other in the stack conveyance direction and a floor joining the side walls, wherein one of the side walls serves as supporting surface (7) and the floor as stop ledge (8), and wherein the other side wall (21) is capable of taking over the function of the next upstream or downstream stack support (2).